

CONTRIBUTIONS
TO
SURGERY AND MEDICINE.

Fractures of the Neck
of the Femur,

BY
H. O. THOMAS.

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FRACTURES OF THE NECK OF FEMUR.

IN the number of this Journal issued Oct. 12th, 1882, my views and experiences regarding the principles, which ought to guide surgeons in their treatment of fracture of the patella, were given to your readers. Since that time the subject has been much debated before several of our societies and discussed in our periodicals. The information, supplied me from this source, only shows the general poverty of knowledge in relation to the treatment of fractures of the patella, for, of all the gentlemen who joined in the debates or contributed to the literature of the subject, not one was able confidently to recommend a rational and trustworthy method of treatment; thus it is not surprising to find the majority of those, who expressed their opinions, hailing with undisguised delight the proposition that patellar fractures, whether they be simple or compound, should be treated by the knife and drill,

It would be interesting to know, if it were possible, how many of those, who so readily approved of this proposal, would, if suffering from the accident, submit themselves to such treatment. I have of late years maintained, and, from my experience up to this date, am more than ever convinced, that, whether the fractured patella be complicated by a wound or not, interference by knife and wiring will not give as good and safe results as can be gotten by a natural method of cure, if the surgeon knows how to aid it or at least not thwart it. There are principles of treatment which, if carried out in practice, will enable the surgeon to dismiss his patient with, at least, a useful limb, and in the majority of cases with a faultless cure.

The evils, which our past and present practice up to this time have failed to avoid, are these: the patient might after treatment be unable to extend his leg properly, or, when standing, to maintain his thigh rigidly in a line with the leg, or there might be an excess of mobility with deficiency of power. These remains of the

accident can be avoided, as I have shown in the paper mentioned above.

This contribution to the treatment of fractures at the neck of the femur has been prefaced by the foregoing remarks relative to patellar fractures, because, in giving my views of the theory of treatment, proper to fractures at the neck of the femur, reference must be made to principles which, I maintain, apply equally to the treatment of fractures either of the patella, neck of the femur or of the olecranon, and here are repeated the views, given in my former paper in this journal, that the treatment either of these or any other fractures, or of diseased joints, is not mainly a question of mechanics. It is time enough to begin inventing splints when we know with some certainty what we ought to be doing to gain our purpose, then we will be better able to decide upon the best form of mechanical aid to treatment. That some of the machines, usually employed in treatment, have advantages, which aid us in the carrying out of certain principles is as obvious as the fact, that other

machines may be positively injurious, if these same principles ought to guide us during treatment. Of late years, there has been a surfeit of inventions, the construction of which demonstrates that their inventors had no knowledge of the treatment that ought to be followed to secure a perfect recovery. Mechanical ingenuity cannot supply the place of intelligence. It is my contention that there is a rational treatment which, if adopted, leads to success in fractures of either the patella, olecranon or neck of femur, though the mode of application must vary to suit the variation of form at the three different parts.

In the treatment of fractures of the olecranon, the mode of carrying out the principles of practice here recommended is very simple, as no special appliance is required to gain our purpose. The limb has merely to be maintained extended, or nearly so, by any method that does not involve, in its application, compression on any part within about two inches either above or below the elbow-joint, for a period long enough

that firm and sound consolidation may take place. The only exception to this rule is in those cases, where the fracture of the olecranon is compound and invading the elbow-joint, when the position of flexion ought to be maintained during treatment, lest the injury may run a course ending in the loss of motion at the joint. The risk of the lesion being cured with some defect of symmetry, must be incurred in order to make certain of gaining a useful result. Olecranon fractures do not cause to the surgeon so much anxiety as those of either the patella or neck of femur. Fractures of the patella happen most frequently during the prime of life, when the sufferer can ill afford to be crippled, whilst fractures of the neck of the femur most frequently occur in the decline of life; and here again it is a very pitiful thing, if the sufferer must forego the enjoyments of what he had secured for himself in earlier years, by being either constrained always to use crutches, or remain in seclusion, and in most instances his repose at night is interrupted by pain—which must somewhat cur-

tail the duration of his life. Can any treatment not generally known help us to avoid these evils? Certainly.

Those of my readers, who have not passed many years in the profession, may perhaps think this picture, representing the imperfections of our past treatment of fractures at the neck of femur, as being much overcoloured; but those surgeons, who have had many opportunities of observing these injuries, must know that the evils here detailed are not exceptional terminations when the hip-joint has been subjected to injury, even though there be no fractures. I am not ignorant of the fact; that some cases of fractures of the patella, olecranon, and *neck of femur* sometimes do recover perfectly, without any treatment whatever. Such cases only go to show that the other cases could, if we knew how, be made to recover also. If none of these fractures had ever been known to recover spontaneously, then we would be justified in concluding that there was in these fractures no tendency to such repair, and the experiment of direct interference would be excusable.

The unprofitable results, observed after the treatment of these three fractures, are only similar to unfortunate results, after the treatment of other bony parts, which are known as delayed and non-union. Our indifferent success in the treatment of the three forms of fracture, here referred to, partly arises from the fact, that these fractures are much more prone than others to have the development of consolidation arrested, and that surgeons have not hitherto allowed for this fact, nor directed their treatment so as to physiologically favour the reformation of sufficient amount of sound connective material between the separated parts. Our failures ought to be credited to, and can be shown to arise partly from, defective treatment.

For the guidance of the surgeon in the treatment either of fractures or of simulated fractures of the neck of the femur after injury to the joint, the following rules, which are trustworthy, may be recommended. If adhered to, the practitioner can in all cases promise his patient, that he will so far recover as to be able to indulge in walking

exercise without artificial assistance, and that he will also be free from pain.

That my readers may better understand the principles and practice here advocated, they may require an explanation of my statement, "For the guidance of the surgeon in the treatment of fractures or of SIMULATED fractures of the neck of the femur after injury to the joint." This refers to two forms of injury to the hip-joint, one in which fracture of the neck of the femur exists, and can be diagnosed immediately after the injury—or some few hours after; the other injury is that following an accident, and when there is not a fracture, but after the lapse of some time—generally after the second week many of the signs of fracture appear; shortening, eversion of the limb, limited motion, and the deformity of flexion, demonstrable by the flexion test. This differs in no manner from the signs of inflamed hip-joint, which indeed it is, and which can be diagnosed as not a fracture of the neck of the femur, by the surgeon placing simultaneously the palms of his hands upon the patient's

trochanters he will notice that, in fractures, the trochanter of the defective limb is slightly more full, prominent, and sometimes higher up than that of the sound side. This differential diagnosis is not of much practical value, as the details of treatment are nearly alike, whether there be fracture or not; if there be no fracture, the omission of retentive extension is not a fault, but indeed where fracture exists, a retentive extension is not always possible of being safely applied.

When called to the patient, he should at once fix the joint in a line with the trunk, as immovable as possible, so as to minimise the coming or present irritation of the joint, then apply any form of retention which will keep the limb at, or as nearly as possible at, its normal length, and let any bandaging that may be employed be wound in a direction the reverse of the external rotation observed in these fractures. The patient must be limited to a diet with the least possible ingesta lest the patient's limb be disturbed during a movement of the bowels in the period of greatest pain,

and when he is utterly helpless. The bowels will infallibly act spontaneously, if the diet has been properly selected (milk especially being excluded), at or before the termination of the third week, and at this time the patient will be able to assist his nurse, and movement is less injurious to him. The limitation of diet need not continue after the second spontaneous action of the bowels.

The mechanical treatment must be continued, in patients beyond the age of 70, for six weeks after the *total cessation of night pain*, when the patient must spend a further period of four weeks in bed without *any control or treatment whatever*. In patients passed the age of 60, but under 70 years of age, the mechanical control should be continued for eight weeks after the *total cessation of night pain*, and there must be another four weeks of reclusion in bed without surgical restraint. The younger the patient the longer must the mechanical control be continued. The duration of the periods of surgical control here laid down may appear rather indefinite and long; but the game here is always worth the candle. Some cases

may recover with less control, but what best conduces to make the surgeon's reputation is, not a report of isolated instances of rapid recovery, but, that he has always been able to benefit his patients. Fractures at the neck of the thigh-bone are extremely rare in the early period of life, but they have been noticed even at the period of childhood, and when recognised, should be treated as a mild case of inflamed hip-joint. If there has been delay in resorting to proper treatment, as the surgeon is not always called to the patient's assistance immediately after the accident, the average period of each stage of treatment here laid down, ought to be somewhat prolonged. Should there have been even two or three years delay, the surgeon can, by following the rules here laid down, make the limb painless and useful.

The minutiae of practice, which I employ, can best be detailed by a sketch of a few suppositious cases, which, nevertheless, are counterparts of actual ones.

Case A., aged seventy, makes a false step, when coming down the stairs of his house, and falls on his right side, immediately feels intense pain in the groin and down the thigh, is incapable of recovering the perpendicular position, and objects to his attendants making any attempt to remove him to bed. On my arrival, an examination of the region of the hip-joint and of the lower limb convinces me that there is a fracture of the femur at its neck, there is eversion with no power of inversion, tenderness on pressure at the groin, no shortening. I request that the patient be left where he was found after the accident, while I fetch suitable appliances; these are the posterior support and retentive extension always adopted by me in the treatment of diseased hip-joints and of fractures at and immediately below the trochanter. As soon as these are at hand, the patient is carefully undressed, the splint fitted, without the shoulder straps, and the retentive extension is attached above the knee and tied to the lower horns of the hip-appliance. The knee and thigh are now bound to the upright of the saddle, the bandage being wound round in the direction of inversion, and the top ring of the saddle is fitted and tied, after which the patient is removed to bed, on a first floor if possible, though, when all this has been done, it is easy to take him up to a second floor without causing much pain. This is done by one attendant placing, in the case of the right limb being the injured one, his left hand under the upright of the saddle just below the knee, while with his right hand he grasps the left leg of the patient, a second attendant

supports the sacrum, and a third grasps the top ring of the saddle opposite the sternum and carries the trunk portion of the patient, who is now placed in bed--which should be a feather one or made of some material that does not form a very hard mattress. After this the person who is to nurse the patient is shown how to use the bed-pan when required, so that the patient may not be much pained nor further injured. When there is occasion for the use of the utensil, the mode of assisting the patient is thus :—the attendant stands by the bedside and, passing an arm under the lower end of the hip-appliance and a corresponding part of the sound limb, raises the lower extremities and pelvis of the sufferer to any height that permits of the bed-pan being slipped under. This position, which is that of an incline from the feet to the head, if in any way advantageous, can be easily maintained until the act of nature is complete. After *practically* demonstrating this to the attendant, I give some instructions relative to the quality of food to be used, and that the patient must be inspected occasionally to avoid bed-sores; further, should the linen under the patient become moistened or stained by excretions, that any such offense can be removed by the method used to pass the bed-pan under the patient. The same plan can also be resorted to when dressing any bed-sores that should form. The parts where bed-sores are prone to appear are over the sacrum and at the upper ring of the saddle; if they appear at the latter part, then they can be dressed by rolling the patient over on to the

sound side, by grasping well the hip-appliance and limb between the two lower rings with one hand, and the *patient's shoulder* with the other hand, when the operator has complete power to roll the whole body, which enables him to turn the patient over without any twisting tendency, as the lower extremity and the trunk go over in line, and thus any damage to the fracture is avoided. In this case A, the appliance was put on while the patient lay just where he was found after the accident, for had he been carried unprotected by surgical fixation of the part, it would almost certainly have been more deformed and extreme shortening might have followed, whilst immediately after the accident there was none. A is a typical case, but there are to be met with cases presenting special difficulties, yet they are no bar to useful recovery, but may make recovery with no defect impossible. For instance—B.—Suffering from fracture of the neck of the femur. When the surgeon examines the limb he finds it closely mapped out with varicose veins; in such a case it is not safe to trouble about the length of the limb, as aged people, with this defect, are very intolerant of the means used to form a retentive extension dressing. In such a case, the shoulder-brace must be substituted, otherwise the machine would slip downwards. The treatment of recent fractures of the neck of the femur do not present any difficulty to those surgeons who can fit a hip-apparatus, suitable for the treatment of inflammation of this joint, but when the surgeon is called

upon to treat cases of fractures that have failed to recover, and both painful and useless—cases that may have been in a non-healing condition one or more years—then the attempt, made by the surgeon to rectify the part, requires some care for the first three weeks, the patient having really to undergo *the process of the reduction of deformity*, as though there had been no fracture originally, treated as if it had been primarily one of simulated fracture of the neck of the femur, and the length of the limb ignored. During these three weeks the patient suffers some aggravation of pain, but it rapidly passes away as soon as the limb is in line with the trunk; to avoid much pain and not dispirit the patient, the reduction should be allowed to progress slowly, as success is certain. The cases of simulated fracture of the neck of the femur require the same details of treatment as fractures of the femur neck, with this exception, that retentive extension is not used, but in its place I employ the shoulder-brace. Cases of injury, simulating fractures at the hip-joint, are very frequently misinterpreted, and are rarely relieved except by mechanical treatment. Experience has shown me that these cases are very amenable to recovery when efficient mechanical control is applied to them. The hip saddles referred to in this contribution as used by me are made by a mechanic in my employ, but those surgeons who would wish such appliances can get them from Mr. Critchley, 88, Upper Pitt Street, Liverpool, who supplies a cheaper and better model than any in the market.

Case C., while passing along a street, the parapet of which was rather narrow, was knocked down by a youth (who careered against him), and fell on to his left side ; with some effort and pain he rose up, but found he could not proceed home without help. A sympathizer hailed a cab, in which he proceeded home, where he had to be assisted to undress and helped into bed, and his medical attendant was sent for. On examination of his joint and limb, it was found that there was no shortening, despite the efforts he had made since the accident, slight eversion, pain both on pressure of the groin and on rotating the limb, also the power of eversion and rotation was diminished. An opiate is prescribed, and the patient is directed to remain quiet, no local application. On the second day no variation of the sensational or obvious symptoms, a cloth damped in cold water is applied over the hip and groin. The patient was watched for nearly two weeks, when he began to complain of rheumatism in the joint at night ; the joint was now tested by the flexion test and a deformity noticed. Now the proper interpretation of the feeling which the patient attributed to rheumatism was given to him, and the importance of so treating the lesion that the condition resulting from the accident might not become permanent. About the fourteenth day after the accident a posterior hip-appliance was fitted, which, for the first forty-eight hours, rather increased the symptoms and also caused some amount of lumber pain—all of which gradually wore off. The surgical restraint was continued six weeks after the cessation of night pain, in all eight

weeks, and then removed, but the patient remained four weeks longer in bed, after which he got up, and with the aid of moderate exercise, taken by the use of crutches, was perfectly well in about eight months.

It has often occurred that uncured cases of simulated fracture of the neck of the thigh-bone, have led to diversity of opinion among the surgeons, whom such sufferers from "time to time" have consulted, the difference of opinion arising as to the primary nature of the lesion. The opinions of those consulted later on being seldom in accord with the diagnosis of the surgeon, immediately called to the sufferer after his accident, who fails to find a fracture, which does not exist, but the other surgeons, afterwards finding some symptoms which follow fracture in connection with the hip-joint, generally suppose the delayed recovery to be due to non-union of the fractured bone. Some years ago such a case was* the subject of a lawsuit, and the surgeon was successfully prosecuted for erroneous diagnosis and mal praxis.

* In the United States.

In after years, the prosecutor died, and by a *post-mortem* examination of the joint it was found that there had never been any fracture of the neck of the femur.

The cause of our failures to succeed in producing useful cures after fractures of the patella, olecranon and neck of femur have been ; (a) that, even when the treatment has been correct, it has been suspended before the parts immediately and secondarily affected have regained health and its accompaniment strength, so as to be equal to the strain of use ; (b) that practice of compressing the seat of injury interferes with its nutrition ; the mistaken notions, founded on the pathology of the parts after treatment in past time, have dispirited surgeons from striving at better results.



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This Volume will comprise the following Parts:—

- PART 1. Intestinal Obstructions. (*Published.*)
- PART 2. The Principles of the Treatment of Joint Disease,
Inflammation, Anchylosis. Reduction of
Joint Deformity, Bone Setting. (*Published.*)
- PART 3. The Principles of the Treatment of Fractures.
Recent, Delayed, and Un-united.
- PART 4. On the Reduction of Dislocations.
- PART 5. On Fractures of the Lower Jaw. (*Published.*)
- PART 6. Fractures, Dislocations, Diseases and Deformities
of the Bones of the Upper Extremity.
- PART 7. Fractures, Dislocations, Deformities and Diseases
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- PART 9. Spinal Deformities.
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